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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,205	03/31/2004	Karl R. Amundson	H-367	7482

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EXAMINER	
KOVALICK, VINCENT E	

ART UNIT	PAPER NUMBER
2677	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,205	AMUNDSON ET AL.	
	Examiner	Art Unit	
	Vincent E. Kovalick	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *30-41 and 43-61* is/are allowed.

6)☒ Claim(s) *1,4,5,7,10-13,19,20,26,29 and 42* is/are rejected.

7)☒ Claim(s) *2,3,6,8,9,14-18,21-25,27 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to Applicant's Continuing Patent Application, Serial No. 10/8145,205, with a File Date of March 31, 2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 7 and 13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. (USP 5,663,772) taken with Niki (USP 5,335,294) in view of Kaneko et al. (USP 5,831,705) further in view of Guttag et al. (USUP 5,923,340) taken with Drews (USP 5,621,869) in view of Lin et al. (USP 5,729,663).

Relative to claims 1 and 7, Uehara et al. **teaches** Gray-Level image processing with weighting factors to reduce flicker (col. 2, lines 57-67; col. 3, lines 1-67 and col. 4, lines 1-67); Uehara et al. further **teaches** a device controller comprising: storage means arranged to store a lookup table containing data representing the impulses necessary to convert an initial gray level to a final gray level (col. 10, lines 33-52 and col. 15, lines 29-40).

Uehara et al. **does not teach** data representing at least an initial state of each pixel of the display, dated representing at least one temporal prior state of each pixel of the display at a predetermined time prior to initial state, and data representing at least one gray level prior state of each pixel

prior to a change in gray scale level to produce the initial state; input means for receiving an input signal representing a desired final state of at least one pixel of the display; calculation means for determining, from the input signal, the stored data representing the initial state, the at least one temporal prior state and the at least one gray level prior state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and output means for generating an output signal representative of said impulse.

Uehara et al. teaches Gray-Level image processing.

Niki **teaches** image processing for pattern extraction (col. 2, lines 6-50); Niki further **teaches** data representing at least an initial state of each pixel of the display (col. 4, lines 25-53).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. the features as taught by Niki in order to store the initial state of each pixel in the look-up table.

Uehara et al. taken with Niki **does not teach** dated representing at least one temporal prior state of each pixel of the display at a predetermined time prior to initial state, and data representing at least one gray level prior state of each pixel prior to a change in gray scale level to produce the initial state; input means for receiving an input signal representing a desired final state of at least one pixel of the display; calculation means for determining, from the input signal, the stored data representing the initial state, the at least one temporal prior state and the at least one gray level prior state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and output means for generating an output signal representative of said impulse.

Uehara et al. taken with Niki teach Gray-Level image processing.

Kaneko et al. **teaches** a liquid crystal display device (col. 3, lines 36-67 and col. 4, lines 1-34); Kaneko et al. further **teaches** dated representing at least one temporal prior state of each pixel of the display at a predetermined time prior to initial state (col. 17, lines 59-67 and col. 18,lines 1-2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki the features as taught by Kaneko et al. in order to store the temporal prior state of each pixel in the look-up table to accommodate further processing.

Uehara et al. taken with Niki in view of Kaneko et al. **does not teach** data representing at least one gray level prior state of each pixel prior to a change in gray scale level to produce the initial state; input means for receiving an input signal representing a desired final state of at least one pixel of the display; calculation means for determining, from the input signal, the stored data representing the initial state, the at least one temporal prior state and the at least one gray level prior state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and output means for generating an output signal representative of said impulse.

Uehara et al. taken with Niki in view of Kaneko et al. teaches Gray-Level image processing.

Guttag et al. **teaches** process of processing graphic data (col. 1, lines 66-67; col. 2, lines 1-67 and col. 3, lines 1-9); Guttag et al. further **teaches** data representing at least one gray level prior state of each pixel prior to a change in gray scale level to produce the initial state;

It would have been obvious to a person of ordinary skill in the art at the time of the invention

to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. the features as taught by Guttag et al. in order to store at least one gray level prior state of each pixel each pixel in the look-up table to accommodate further processing.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. **does not teach** input means for receiving an input signal representing a desired final state of at least one pixel of the display; calculation means for determining, from the input signal, the stored data representing the initial state, the at least one temporal prior state and the at least one gray level prior state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and output means for generating an output signal representative of said impulse.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. teaches Gray-Level image processing.

Drews **teaches** multiple level computer graphics system with display level blending (col. 1, lines 18-67 and col. 2, lines 1-23); Drews further **teaches** input means for receiving an input signal representing a desired final state of at least one pixel of the display (col. 5, lines 29-55).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. taken with Guttag et al. the features as taught by Drews in order to provide the signal necessary to initiate generating the desired final state of the display pixels.

Uehara et al. taken with Niki in view of Kaneko et al. further in view of Guttag et al. taken with Drews **does not teach** ; calculation means for determining, from the input signal, the stored data representing the initial state, the at least one temporal prior state and the at least one gray level

prior state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and output means for generating an output signal representative of said impulse.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews teaches Gray-Level image processing.

Lin et al. **teaches** a method and apparatus for gray screening (col. 2, lines 59-67; col. 3, lines 1-67 and col. 4, lines 1-14); Lin et al. further **teaches** calculation means for determining, from the input signal, the stored data representing the initial state, the at least one temporal prior state and the at least one gray level prior state of said pixel, and the look-up table, the impulse required to change the initial state of said one pixel to the desired final state; and output means for generating an output signal representative of said impulse (col. 11, lines 10-33 and Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. taken with Guttag et al. in view of Drews the features as taught by Lin et al. in order to generate the output signal representative of the pixel states required to compute the output signal, said required states being included in the system look-up table.

Regarding claims 13, Kaneko taken with Guttag et al. further **teaches** a display device wherein the calculation means is arranged to determine the compensation voltage dependent upon at least one of a temporal prior state of the pixel and a gray level prior state of the pixel (Kaneko et al. col. 17, lines 59-67 and col. 18, lines 1-2 and Guttag et al. col. 18, lines 59-67 and col. 19, lines 1-10 respectively).

4. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. as applied to claims 1 and 7 respectively hereinabove, and further in view of Mori et al. (USP 5,903,251).

Regarding claims 4 and 10, Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. **does not teach** the said controller wherein the input means is arranged to receive a temperature signal representing the temperature of at least one pixel of the display, and the calculation means is arranged to determine the impulse dependent upon the temperature signal.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. teaches Gray-Level image processing.

Mori et al. **teaches** a liquid crystal apparatus that changes a voltage level of a correction pulse based on a detected temperature (col. 2, lines 35-64); Mori et al. further **teaches** the said controller wherein the input means is arranged to receive a temperature signal representing the temperature of at least one pixel of the display, and the calculation means is arranged to determine the impulse dependent upon the temperature signal (col. 1, lines 61-67 and col. 2, lines 1-22).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. the features as taught by Mori et al. in order to generate a final output signal that has been corrected for temperature variance.

5. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. as applied to claims 1 and 7 respectively in item 3 hereinabove, and further in view of Dingwall et al. (USP 5,600,345).

Relative to claims 5 and 11, Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. **does not teach** the said controller wherein the input means is arranged to receive a lifetime signal representing the operating time temperature of the pixel, and the calculation means is arranged to determine the impulse dependent upon the lifetime signal.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. teaches Gray-Level image processing.

Dingwall et al. **teaches** the said controller wherein the input means is arranged to receive a lifetime signal representing the operating time temperature of the pixel, and the calculation means is arranged to determine the impulse dependent upon the lifetime signal (col. 8, lines 24-41).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. the features as taught by Dingwall et al. in order to adjust the output signal for any signal degeneration due to lifetime operation of the device.

6. Claims 12, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. as applied to claims 1 and 7 respectively in item 3 hereinabove, and further in view of Verhulst (USP 5,905,484).

Regarding claims 12 and 19, Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. **does not teach** the device controller comprising compensation voltage data for each pixel of the display; and from the compensation voltage date for said pixel, a compensation voltage for said pixel, and summing the drive voltage and the compensation voltage to determine a pixel voltage.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. teaches Gray-Level image processing.

Verhulst **teaches** a LCD with control circuitry (col. 1, lines 42-67 and col. 2, lines 1-67 and col. 3, lines 1-13); Verhulst further **teaches** the device controller comprising compensation voltage data for each pixel of the display; and from the compensation voltage date for said pixel, a compensation voltage for said pixel, and summing the drive voltage and the compensation voltage to determine a pixel voltage (col. 2, lines 13-24 and 64-67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. the features as taught by Verhyulst in order to adjust the output signal for any signal degeneration introduced during the operation of the device.

Regarding claims 20, Kaneko taken with Guttag et al. further **teaches** a display device wherein the calculation means is arranged to determine the compensation voltage dependent upon at least one of a temporal prior state of the pixel and a gray level prior state of the pixel (Kaneko et al. col. 17, lines 59-67 and col. 18, lines 1-2 and Guttag et al. col. 18, lines 59-67 and col. 19, lines 1-10 respectively).

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (USP 5,448,258) taken with Eisler et al. (USP 5,844,569) in view of Numao et al. (USP 5,969,701). Relative to claims 26, Edwards **teaches** an active matrix display device (col. 2, lines 6-68 and col. 3, lines 1-61); Edwards further **teaches** updating a bistable electro-optic display having a plurality of pixels arranged in a plurality of rows and columns such that each pixel is uniquely defined by the intersection of a specified row and a specified column, and drive means for applying electric fields independently to each of the pixels to vary the display state of the pixel, each pixel haven at least three different display states, (col. 5, lines 46-68, col. 6, lines 1-9 and Fig. 1).

Edwards **does not teach** storing region data representing a defined region comprising a part but less than all of said display; determining for each pixel whether the pixel is within or outside the defined region; applying a first drive scheme to pixels within the defined region and a second drive scheme, different from the first drive scheme, to pixels outside the defined region. Edwards teaches an active matrix display device.

Eisler et al. **teaches** a display controller for converting a pixmap into a display image on a display screen (col. 4, lines 38-67 and col. 5, lines 1-37); Eisler et al. further **teaches** storing region data representing a defined region comprising a part but less than all of said display;

determining for each pixel whether the pixel is within or outside the defined region (col. 10, lines 29-42).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Edwards, the feature as taught by Eisler et al. in order to segment the display storage to make more efficient the process of storing and retrieving date from the system memory unit. and to accommodate data of different natures.

Edwards taken with Eisler et al. **does not teach**; applying a first drive scheme to pixels within the defined region and a second drive scheme, different from the first drive scheme, to pixels outside the defined region.

Edwards taken with Eisler et al. teaches an active matrix display device with defined storage regions.

Numao et al. **teaches** driving device and driving method of matrix-type display apparatus (col. 2, lines 22-67); Numao et al. further **teaches** applying a first drive scheme to pixels within the defined region and a second drive scheme, different from the first drive scheme, to pixels outside the defined region (col. 5, lines 21-28).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Edwards taken with Eisler et al. the feature as taught by Numao et al. in order to put in place the means to address the separate storage regions independent of each other.

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards taken with Eisler et al in view of Numao et al. as applied to claim 26 in item 8 hereinabove, and further in view of Ho (USP 5,619,708).

Regarding claim 29, Edwards taken with Eisler et al in view of Numao et al **does not teach** an image display unit with storage defined in separate regions wherein the defined region comprises a text box used for entry of text on to the display.

Edwards taken with Eisler et al in view of Numao et al teaches an active matrix display device with defined storage regions.

Ho **teaches** a system for generating database input forms (col. 1, lines 33-67 and col. 2, lines 1-15); Ho further **teaches** an image display unit with storage defined in separate regions wherein the defined region comprises a text box used for entry of text on to the display (col. 4, lines 58-67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Edwards taken with Eisler et al. in view of Numao et al. the feature as taught by Ho in order to accommodate handling text data as an object entity or access and storage in the system storage unit.

10. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. as applied to claim 1 in item 3 hereinabove, and further in view of Crossland et al. (USP 5,774,104).

Relative to claim 42, Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. **does not teach** an image display device wherein for at least one transition for which the initial and final state of the pixel ae different , the output signal consists of a pulse having a voltage level of 0 preceded and followed at by least two pulses having voltage levels of the same one of +V and –V.

Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. teaches Gray-Level image processing.

Crossland et al. **teaches** a co-ordinate addressing of liquid crystal cells (col. 1, lines 9-64);

Crossland et al. further **teaches** an image display device wherein for at least one transition for which the initial and final state of the pixel ae different , the output signal consists of a pulse having a voltage level of 0 preceded and followed at by least two pulses having voltage levels of the same one of +V and –V (col. 5, lines 18-36 and Fig. 4D).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Uehara et al. taken with Niki in view of Kaneko et al. and further in view of Guttag et al. taken with Drews in view of Lin et al. the features as taught by Crossland et al. in order to neutralize the pixel in preparation for being set to its final state.

Allowable Subject Matter

11. Claims 2-3, 6, 8-9, 14-18, 21-25 and 27-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Relative to claims 2 and 8, the major difference between the teachings of the prior art of record (USP 5,663,772, Uehara et al. ; USP 5,335,294, Niki ; USP 5,831,705, Kaneko et al. and USP 5,923,340, Guttag et al.) and that of the instant invention is said prior art of record **does not teach** a device controller wherein the storage means is arranged to store data representing at least two gray level prior states of each pixel, with calculation means arranged to determine the

impulse dependent upon the at least one temporal prior state, the at least two gray level prior states and the initial state of the one pixel.

Relative to claims 3 and 9, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** the said controller wherein the storage means is arranged to store data representing at least two temporal prior states of each pixel, and the calculation means is arranged to determine the impulse dependent upon the at least two temporal prior state, the at least one gray level prior state and the initial state of the one pixel.

Regarding to claim 6, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a method wherein a least one entry in the look-up table comprises a pointer to an entry in a second table specifying one of a plurality of types of waveform to be used for the relevant transition, and at least one parameter specifying how the waveform is to be varied for the relevant transition.

Relative to claims 14 and 21 the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a device controller wherein the output means is arranged to apply the compensation voltage to the pixel both during a period when a drive voltage is being applied to the pixel and during a hold period when no drive voltage is being applied to the pixel.

Relative to claims 15 and 22 the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a device controller wherein a device controller wherein the calculation means is arranged to update the

compensation voltage for each pixel during each super frame required for a complete addressing of the display.

Regarding to claims 18 and 25 the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a device controller wherein the output means is arranged to apply the compensation voltage in the form of an exponentially decaying voltage applied at the end of at least one drive pulse.

Relative to claim 27, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** the method step wherein the first and second drive scheme differ in bit depth.

12. Claims 30-41 and 43-61 are allowed.

13. The following is an examiner's statement of reasons for allowance:

Relative to claim 30, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a method of driving a bistable electro-optic display wherein for at least one transition from an initial state to a final state, the output signal comprises a DC imbalance fine tuning sequence which: (a) has a non-zero net impulse; (b) is non-contiguous; (c) results in a change in gray level of the pixel that is substantially different from the change in optical state of its DC reference pulse; and (d) results in a change in gay level of the pixel smaller in magnitude than the change in gray level caused by its time-reference pulse.

Regarding claim 43, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a method of driving a bistable electro-optic display wherein for a least one transition from an initial state to a final state

the output signal comprises a DC balanced fine tuning sequence which: (a) has substantially zero net impulse; and (b) at no point in the fine tuning sequence, causes the gray level of the pixel to vary from its gray level at the beginning of the fine tuning sequence by more than about one third of the difference in gray level between the two extreme optical states of the pixel.

Relative to claim 45, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a method of driving a bistable electro-optic display comprising applying to each pixel of the display an output signal effective to change the pixel from an initial state to a final state, wherein for at least one transition, the output signal is non-zero but DC balanced.,

Regarding claim 57, the major difference between the teachings of the said prior art of record and that of the instant invention is said prior art of record **does not teach** a method of driving a bistable electro-optic display having at least one pixel which comprises applying to the pixel a waveform V(t) such that: $J=\int_0^T V(t)M(T-t)dt$ (where T is the length of the waveform, the integral is over the duration of the waveform, V(t) is the waveform voltage as a function of time t, and M(t) is a memory function that characterizes the reduction in efficacy of the remnant voltage in induce dwell-time-dependence arising from a short pulse at time zero) is less than about 1 volt sec.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	5,831,588	Hotto
U. S. Patent No.	5,805,175	Priem
U. S. Patent No.	5,061,044	Matsunaga
U. S. Patent No.	4,725,129	Kondo et al.

For Responding

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 703 306-3020. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vincent E. Kovalick
August 2, 2005

Ricardo Osorio
PRIMARY EXAMINER